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ABSTRACT

The junior high school, typically grades 7-8 or 7-9, offers a program that is "not-quite-yet-but-trying-to-be" a high school. The organization of the middle school (commonly the grades 6-8), however, is based on a philosophy of education that was specifically designed to meet the special needs of a preadolescent learner; middle schools incorporate unique curricula to better effect the transition between elementary and high school programs, rather than attempt to approximate one or the other. Many educators, perceiving junior highs as a "failed" promise, have turned to the middle school philosophy as an affirmation of a higher level of commitment. Indeed, since 1964, the number of new middle schools replacing traditional junior highs has progressively increased. A review of research on middle-level education indicates that: (1) although primarily an administrative concern driven by attendance boundaries, grade level organization had little impact on middle-level students' academic achievement; and (2) the terms "junior high school" and "middle school" do not define a school's program. Additionally, the effective schools research has given rise to discriminant analyses of effective middle school variables and allowed researchers to identify those characteristics most commonly found within "exemplary" middle schools. (159 references) (KM)

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VERTICAL ARTICULATION for the MIDDLE GRADES

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Research Fellow

CALIFORNIA EDUCATIONAL RESEARCH COOPERATIAVE

University of California

Riverside, California

1989

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Special thanks to my friend and former colleague at Southwest Missouri State University Dr. Dale Allee whose curriculum expertise is equalled by his enthusiasm for learning--an attribute he shares with students and peers. Dr. Allee's years of middle level education work is reflected in this review.

FOREWORD

Any attempt to respond to all research on a topic as mammoth and convoluted as middle level education will prove cumbersome at least and futile to the purpose at hand; therefore, an effort was made, here, to identify the most pertinent, recent and methodologically sound studies. Some well-established research is cited secondarily; however, approximately 92% of the citations are drawn from original sources. A concerted effort was made to add to the existing body of knowledge by drawing from outside the field of education, incorporating related social science research.

A few specific sources proved especially useful. The NASSP *Bulletin* is often cited as is *Educational Leadership* and various National Middle School Association publications. The September 1986 publication of *Clearing House* was devoted to middle level educational issues, and the 1984 document, *Perspectives: Middle School Education, 1964-1984* (celebrating the 20th anniversary of the middle school movement) contains superb articles written by some of the nation's leading experts, including William Alexander, the "father" of the middle school movement. Alexander's 1981 book *The Exemplary Middle School*, written in collaboration with Paul George (another pundit in the field) is, likewise, a key source.

An ERIC search yielded 1042 articles published between March 1983 and September 1988. Of these, approximately 80 made germane contributions to the topic of middle level reorganization. After examinations of the *Education Index*, the

Dissertation Abstracts International, and the current periodicals, another 60 sources were located. Consultations with leading scholars of middle level research throughout the country led to the identification of another 19 studies. In all, the 159 sources contained in the bibliography, here, represent this author's attempt to provide both comprehensive and state-of-the-art literature.

27 sources listed in the bibliography were published in 1984. Literature over the past five years represents 61% of the total listings, and add to that another five years to constitute the past decade and the figure becomes 82%. Literature between 1947 and 1977, the developing years for the junior high schools and inclusive of the incipient and growing years for the middle school, is represented with 22 citations. The remaining seven entries from 1894 to 1920 are national committee reports primarily responsible for the middle level reorganization movement in the United States.

Vertical Articulation
for the
Middle Grades

INTRODUCTION

A Program, a Philosophy, and a Movement

Before engaging in an analysis of the myriad factors impacting the education of students in the middle of our educational system, i.e., roughly grades 5-9, a clear conceptual framework must be laid in regard to the appropriate lexicon. Although several definitions peculiar to middle level education exist, three key terms (junior high school, middle school, and middle level education) deserve special interpretation; a more comprehensive list of terms is contained in the glossary at the end of this literature review.

The term junior high school used historically from circa 1880 to the present is most commonly employed to denote grade configurations of 7-8 or 7-9 in which a program is designed to approximate the type of education commonly found in high schools, but on a "junior" level. The term middle school invoked in the early 1960's and quite frequently used today may include a variety of grade organizations; however, the most common is a 6-8 configuration, although any combination of grades 5-9 are also often included. The distinguishing characteristic of a middle school is the predominance of policies which specifically address transescent needs. As

will become more apparent subsequently, junior high school is used throughout this review to identify those schools most commonly related to the traditional system offering a **program** that is "not-quite-yet-but-trying-to-be" a high school. Middle school is used, here, to identify those school organizations based on a **philosophy** of education that is specifically designed to meet the needs of the unique learner, incorporating unique curricula to better effect the transition between elementary and high school programs, rather than attempting to approximate one or the other.

Middle level education is, perhaps, the equivalent of a neutral expression that does not identify either a junior high or a middle school, but which encompasses both. Borrowing the definition developed by Toepfer, Lounsbury, Arth, and Johnston (1986),

> "Middle level education" will be used to describe all educational efforts, programs, and grade organizations between elementary and high school. This term is gaining wide use as a single descriptor for all programs that deal with all combinations of grades 5 through 9 for youngsters between 10 and 14 years of age.

The preference, here, is to use middle level education which is indicative of the **movement**, allowing the reviewer to address a number of issues without bias to either camp involved in a semantic debate. Moreover, what becomes increasingly apparent is the association of curriculum reforms to **programs**, transescent needs to the **philosophy**, and the restructuring/redefinition of middle level schools to the **movement**.

Overview

Since emergence of the middle school concept in the early 1960's, the unique needs of preadolescents have been studied, researched, and analyzed with a greater degree of exuberance and sophistication than ever before. George and Oldaker (1985:1) point out that "the middle school movement is one of the largest and most comprehensive efforts at educational reorganization in the history of American public schooling." The last two and a half decades have also seen the cosmopolitan acceptance of "middle school" as the cognomen denoting middle level education; however, critical issues involving its implementation are still of concern to policy makers.

Research on middle level education has progressed from subjective assumptions espoused by proponents and opponents well into the 1970's, to more objective attempts to provide useful data--sorting what can and should be evaluated. This latter body of research, albeit still somewhat incipient in nature, now allows scholars to make some legitimate statements concerning middle level education:

1. Although primarily an administrative concern driven by attendance boundaries, grade level organization or configuration has little if any impact on middle level students' academic achievement.
2. The needs of the clients, i.e., transescents, have been studied and carefully analyzed to determine the types of programs best suited to meet those needs. This was not necessarily the case

prior to the inception of the middle school movement.

3. Social scientists from outside the field of education have made major contributions to our current awareness of the need to address transescent education and related services.

4. The terms "junior high school," "middle school," "K-8" do not define a school's program.

5. Effective schools research, whether or not accurately cast, has given rise to discriminate analyses of effective middle school variables, allowing researchers to identify those characteristics most commonly found within "exemplary" middle schools.

To more fully comprehend the intricacies impacting middle level education, one will do well to review the literature relating to the evolution of rationales which drove (and continue to drive) policy development regulating middle level education. Also critical is an accurate identification of needs of children at the "middle" stage of development. Finally, various alternative interventions designed to cope with these special needs may be of particular interest in 1989 as policy makers continue to search for the most effective type of vertical articulation for the middle level grades.

HISTORICAL DEVELOPMENT

The Junior High School

Scholars of school organization development, for example, Gruhn and Douglass (1947,1956,1971), Alexander (1964, 1968, 1984), Lounsbury (1984), and Melton (1984), commonly refer to a few dominant, influential national reports that greatly impacted administrative decision-making with regard to middle level education. Lounsbury (1984), for example, cites the period from 1890 to 1920 as a struggle between academics and vocations. 19th century school administrators wanted an 8-4 plan to accommodate the many students who dropped out after the 8th grade; and early 20th century policy makers viewed the 6-6 plan as more efficacious, believing this would better facilitate the movement of students into the labor force at a younger age.

As Lounsbury notes,

> Education in the United States has always presented many patterns of school organization, both between states and within states. Even as the 8-4 plan seemed to have gained full acceptance in the late 1800s as the right way to organize public education, a few areas of the young nation followed an 8-5 plan while others went with a 7-4 arrangement. Then the dominant 8-4 plan itself received a challenge from developments that followed. . . . (Lounsbury 1984:2)

As early as 1888, Charles W. Eliot, then President of Harvard, led a National Education Association study that produced an agenda for middle level education. Eliot's statements to the Superintendents' Association in 1888 had a profound effect on subsequent school policy regarding the education of children in middle grades. As chairman of the 1892 Committee of Ten, Eliot and the other committee members issued an influential report calling for several courses, (e.g., algebra, geometry, foreign languages) to begin during the last years of elementary education which, in turn, were to be reduced from eight to six years (National Education Association 1894). These recommendations were soon followed by the so-called "reorganization" movement, as several influential national committees adopted philosophical stances and issued a barrage of recommendations--most of which were "earmarked" for middle level education. (Several of these committee recommendations are outlined in some detail in Appendix A.)

Alexander (1988:107) groups these various committee recommendations into four categories that sought to: (1) Bridge the gap between the more student-centered elementary school and the more subject-centered high school. (2) Serve the unique needs of the age group (from about 10 to 15 years of age). . . . (3) Provide a broader program, with some options for students. . . . (4) Solve various enrollment, facilities, and other administrative problems. . . .

These recommendations laid the groundwork for the advent of junior high schools which emerged circa. 1910-1920. Melton (1984:6) cites three

early instances of the junior high school movement: (1) in 1896, the public schools of Richmond, Indiana, introduced a two-year intermediate school for grades 7 and 8. (2) In 1909, a three-year intermediate school was established in Columbus, Ohio. (3) In 1910, two "introductory high schools" were opened in Berkeley, California. Whether any of these three schools were bone fide junior high's or whether others existed (unreported) is insignificant. What is important is the fact that the turn of the century marked the reorganization of school grade configuration, whether initiated in 1896, 1909, or 1910. Clearly, after the first decade of the 20th century school grade organizations were revamped in an effort to institute junior high's as schools with unique identities.

In 1927 Leonard Koos issued the first statement of purposes of junior high schools; he implored schools to: retain students in school, economize instruction time, recognize and provide for individual differences, provide more extensive guidance, initiate vocational education, recognize the nature of adolescence, begin subject matter departmentalization, and increase students' education and socialization opportunities by providing physical education (Koos 1927).

In 1940 William Gruhn and Harl Douglass developed a list of six essential functions for the junior high. These functions synthesized the context of their antecedents and established many of the principles on which middle level education in the United States is currently based. The Six Functions of the Junior High School are: (1) integration (2) exploration

(3) guidance (4) differentiation (5) socialization (6) articulation (In Gruhn and Douglass 1956:31-32).

These (much anthologized) historic developments led policy makers to reorganize public school grade configurations (if not curriculum). The junior high school was created, then, to replace the 1800's 8-4 organization pattern with a 20th century 6-2-4 or 6-3-3 configuration in hopes of bridging the gap between elementary and high school.

The Middle School

In the early 1960's the middle school was born. Founded on many of the same principles as the traditional junior high school, the middle school was predicated on the insistence for professionalism and greater attention to the special needs of preadolescents. Many educators perceived the junior high as a "failed" promise and turned to the middle school philosophy as an affirmation of a higher level of commitment.

Alexander (1984:14) offers two overriding reasons for the establishment of middle schools: (1) the earlier maturation of girls and boys during the middle school years, with related, increasing concern about the traditional program's match with the needs of that age group, and (2) local problems of buildings, enrollments, desegregation, and other such matters.

A survey by Brooks and Edwards (1978), a replication of William Alexander's (1968) survey identified at least three strong reasons for reorganization and adoption of middle school programs: (1) to provide a

program specifically designed for children in this age group, (2) to bridge the elementary and high school better, and (3) to move grade 9 into the high school.

Just as Melton (1984) found that junior high schools historically had not adequately addressed program reforms, a 1981 NASSP survey found that many "middle schools" were established by districts to alleviate overcrowding rather than to achieve program-related revisions (Valentine et al. 1981). In addition, Lounsbury and Vars (1978) affirm that efforts to eliminate racial segregation spurred some districts to reorganize with middle schools. Others, for example, Alexander and George (1981) cite sundry political and administrative reasons for instituting middle schools. Toepfer, Lounsbury, Arth, and Johnston (1986:6) add that "logistics, school population factors, and economics in the local district must be understood. Middle level school program needs must be prioritized within such parameters." Clearly, though, curricular concerns have not always been the driving force behind the decision to convert to middle school education, even though this latter concern is the theoretical basis cited by proponents.

Since 1964 the number of new middle schools replacing traditional junior highs has progressively increased. The four figures that follow demonstrate the development of middle level education throughout the United States over the past two decades. Figure 1 on page 12 depicts a chronological representation of national surveys by author and year indicating the number of middle level programs reporting themselves to be "middle

schools." The surveys conducted by Alexander (1968), Kealy (1971), Compton (1976), and Brooks (1977) identified a middle school as "a school which combines into one organization and facility certain school years (usually grades 5-8 or 6-8) which have in the past usually been separated in elementary and secondary schools under such plans as the 6-3-3, 6-2-4, and 6-6" (Alexander 1984:22). The United States Department of Education data define a middle school as one including schools beginning with grade 6 or below and with no grade higher than 8. Cuff's (1967) survey used grade-spans comparable to Alexander's definition and represents 1965-66 school year data. Alexander's (1968) data are drawn from the 1967-68 school year; Kealy's (1971) data are from 1967-70; Compton's (1976) data are from 1974 figures; Brooks' (1977) data are from the 1976-77 school year. All U. S. Dept. of Education data are representative of that current year, e.g., the 1981 report is for the 1980-81 school year; the 1984 report is for the 1983-84 school year, et cetera.

Figure 2 demonstrates the number of schools reporting various grade-level configurations for the 1982-83 school year. This information indicates that the grade spans of 7-8-9, 7-8, and 6-7-8 are relatively evenly distributed, per that school year.

Figure 3, then, represents the latest available data from the U. S. Department of Education outlining a variety of K-12 grade spans. If one looks specifically at middle level configurations, the 5,701 K-8 schools, the 7,452 4,5 or 6 to 6,7, or 8 schools, and the 5,142 7-8 and 7-8-9 schools, a

growing preference for "middle schools" over extended elementary or junior highs is evident. These various grade-configurations total 18,295 schools; 31% of these are the elementary K-8 grade span; 41% are middle schools; and 28% are junior high schools. Hence, the middle school grade spans tend to be replacing the more traditional organizational patterns.

Figure 4 provides, perhaps most graphically, a look at the dramatic percent of increase in 6-8 "middle school" grade spans over the past fifteen years. Although 7-8 organizations increased by 13%, 6-8 organizations increased by 129% and the 7-9 organizations *decreased* by 33% between 1970-71 and 1984-85. One predominant inference to be drawn from this data is the perception that 6th graders belong in a middle level school while 9th graders belong in a high school.

To say that grade configuration or vertical organizational patterns do not drive policy regarding the school's programs that, in fact, the program drives policy regarding organization can become a "Catch 22" philosophical debate; however, one can argue that in keeping with the growing trend toward middle school grade configurations, the 6-8 school may more easily facilitate the implementation of those policies relating to the educational program. In other words, although a middle school grade span of 6-8 cannot guarantee a superior program, it can be more conducive to innovative design.

Alexander and George (1981:12) note that "the emergence of the middle school in terms of grade organization and title can be readily documented"; actual program reform is more difficult to determine, however.

Figure 1

Growth of Middle Schools

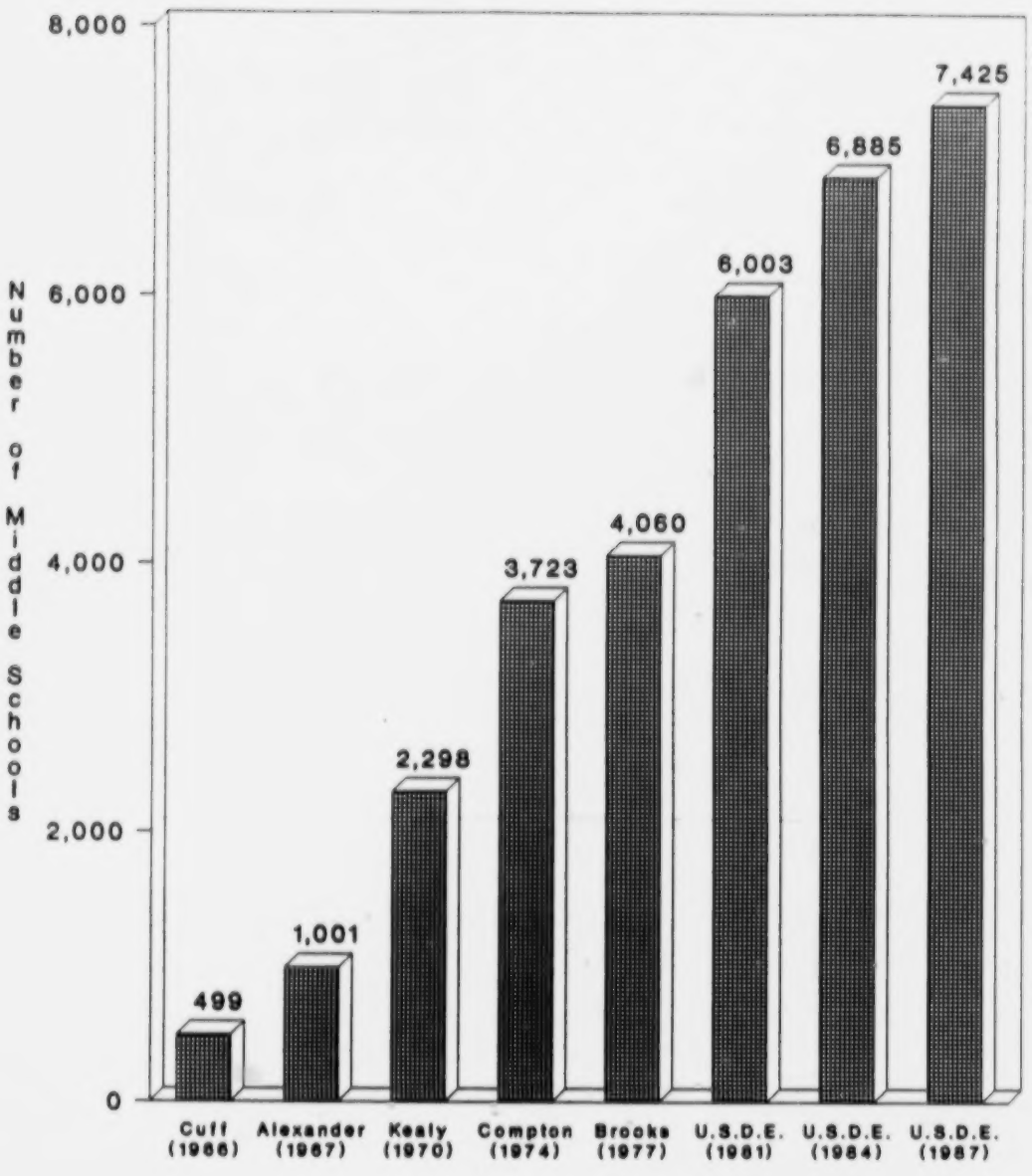

Figure 2.

Middle Level Grade Span Organization

Grade Level	Number of Schools	% of Total
7-8-9	3,340	29
7-8	2,550	22
6-7-8	3,144	28
5-6-7-8	944	8
other	1,428	13
TOTAL	11,406	100

*Source: (Alexander 1984:23)88

Figure 3.

SCHOOLS BY GRADE SPAN
1986-87

Grade Configurations	Number of Schools	% of Total
K-3 and K-4*	5,037	6.3
K-5*	12,164	15.1
K-6*	22,317	27.8
K-8*	5,701	7.1
4,5 or 6 to 6,7,or 8**	7,452	9.3
other unclassified ele. grade spans	6,130	7.6
7-8 and 7,8,& 9***	5,142	6.4
7-12	3,670	4.6
8-12	527	.7
9-12	9,771	12.2
10-12	1,682	2.1
other spans ending with grade 12	152	.2
other unclassified sec. grade spans	462	.6

*may include prekindergarten, kindergarten, or 1st grade
**labeled "middle school" by grade span configuration
***labeled "junior high school" by grade span configuration

Source: United States Department of Education, Center for Education Statistics, "Common Core of Data" survey. (Data here are from information prepared in April 1988.)

Figure 4.

Percent Increase

in

Middle School Grade Spans

Grade Organization		Number of Schools 1970-71	1984-85	Percent of Increase/Decrease
Grades	5-8	722	1,005	+ 39
	6-8	1,622	3,802	+129
	7-8	2,450	2,776	+ 13
	7-9	4,711	3,172	- 33
Others		850	940	+ 11
Totals		10,395	11,695	+ 13

Source: (Alexander 1988:108)

William Alexander, father of the middle school concept, defines the middle school as one "providing a program planned for a range of older children, preadolescents, and early adolescents that builds upon the elementary school's program for earlier childhood and in turn is built upon by the high school's program for adolescence. Specifically, it focuses on the educational needs of what we have termed the 'in-betweenager'. . . (Alexander et al. 1968:3). More recently Alexander and George (1981:3) define a middle school as "a school of some three to five years between the elementary and high school focused on the educational needs of students in these in-between years and designed to promote continuous educational progress for all concerned."

Who is this mysterious person owning the epithets "in-betweenager," "preadolescent," "pre-teen," "tweenager"? Although the cognomen is, perhaps, inconsequential, a full understanding of various developmental stages associated with such a unique group of children is essential if an educational program is to be appropriately tailored to address their unique needs.

The term "transesence" was coined in 1966 by Donald Eichhorn who defined it as:

> The stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence. Since puberty does not occur for all precisely at the same

> chronological age in human development, the transescent designation is based on the many physical, social, emotional, and intellectual changes in body chemistry that appear prior to the time which the body gains a practical degree of stabilization over these complex pubescent changes. (Eichhorn 1966:3)

Tanner (1962) notes that the human biological being is maturing at an accelerated rate, i.e., we are "growing up" faster. For example, he notes that "age at menarche has been getting earlier by some 4 months per decade in Western Europe over the period of 1830-1960"(Tanner 1962:43). Eichhorn (1973), then, citing Tanner and others, argues that students should be grouped according to developmental stages rather than the traditional chronological method. Robert J. Havighurst's (1972) developmental tasks suggest that transescence now encompasses a broader range of skills and abilities than ever before. Havighurst separates those tasks clearly associated with (what he labels) "middle childhood" and others which he labels "adolescence"; however, the distinction is less clear for "transescents," as the chart on the following page indicates no clear distinction for these developmental tasks between middle childhood and adolescence.

The pertinent question to apply to the lists in Chart 1 is: "Where does transescence begin and end?" Although child development experts generally agree that sometime near age 10 through age 14 fairly well defines the transescent in chronological terms, the issue of what these children are able to achieve academically is less clear.

Chart 1.

Developmental Tasks*

Developmental Tasks of Middle Childhood

1. Learning Physical Skills Necessary for Ordinary Games
2. Building Wholesome Attitudes Toward Oneself as a Growing Organism
3. Learning to Get Along with Age-Mates
4. Learning an Appropriate Masculine or Feminine Social Role
5. Developing Fundamental Skills in Reading, Writing, and Calculating
6. Developing Concepts Necessary for Everyday Living
7. Developing Conscience, Morality, and a Scale of Values
8. Achieving Personal Independence
9. Developing Attitudes Toward Social Groups and Institutions

Developmental Tasks of Adolescence

1. Achieving New and More Mature Relations with Age-Mates of Both Sexes
2. Achieving a Masculine or Feminine Social Role
3. Accepting One's Physique and Using the Body Effectively
4. Achieving Emotional Independence of Parents and Other Adults
5. Achieving Assurance of Economic Independence
6. Selecting and Preparing for an Occupation
7. Preparing for Marriage and Family Life
8. Developing Intellectual Skills and Concepts Necessary for Civic Competence
9. Desiring and Achieving Socially Responsible Behavior
10. Acquiring a Set of Values and an Ethical System as a Guide to Behavior

*Adapted from: Havighurst, Robert J. 1972. Developmental tasks and education. New York: David McKay Co., Inc.

David Elkind's work (which draws heavily from Jean Piaget) suggests that the physical, biological changes occurring in transescents may be even less a factor than simply a lack of sophistication to adjust to the mental changes affecting cognitive **and** affective domains (Elkind 1978). "Adolescent behaviors . . . derive . . . from intellectual immaturity as described by Piaget" (Elkind, 1978:134).

Epstein (1980) argues that because transescents have not reached a higher level of "formal operational reasoning"; therefore, exposure to, say three years of curriculum based on formal reasoning, will be ineffective due to the transescent's inability to adjust at this level of development. Others argue that the reverse is true, that middle schoolers are confronted with repetition and drill and become uninterested, (e.g. Flanders 1987; Muther 1987).

Epstein and Toepfer (1978), Epstein (1978,1980,1981), Toepfer (1979,1980,1986), Hensley (1985), and Sylwester (1981, 1982) suggest that brain growth patterns indicating "plateaus" for most transescents (albeit different between boys and girls) may need to be considered when organizing schools to meet this unique developmental stage. Sylwester (1982) believes that the range of difference is great enough between boys and girls that while the former may be ill equipped to handle formal operations, the latter may do so more easily, as girls' brains, specifically the rear right hemisphere, angular gyrus, and prefrontal cortex, are growing at a rate three times that of boys.

Hensley (1985) citing Eichhorn, Epstein, and Toepfer outlines a need to consider brain growth research before making policies regarding both vertical and horizontal articulation, as research indicates growth "spurts" for students in grades 1,2,5,6,9, and 10 (see Sylwester 1981, for example). If policy makers were designing schools based solely on such research, schools would be reorganized into 1-4, 5-8, 9-12 configurations (Sylwester 1981).

Hemispheriosity or lateralization (brain dominance theory) is still another consideration. Since neurosurgeon Roger Sperry won the Nobel Prize in 1981 for his experiments with lateral specialization--an outcome of his research on epilepsy--a plethora of studies have sought to either confirm or deny the existence of dominant characteristics for the hemispheres of the human brain. Wonder's (1984) book *Whole-Brain Thinking* suggests that we should adopt specialized methods to educate specific styles of learning for each hemisphere. Gazzaniga (1985) supports the contention that each hemisphere processes information in different manners, and Glassner (1982) used an electoencehpolograph to identify certain activities associated with each half of the mind when students were involved in a writing exercise. Hopkins (1984) believes greater emphasis needs to be placed on teaching to the right hemisphere; a view supported in a study by Hough (1987) that found high school graduates perceived their K-12 public school curriculum to be predominately inclusive of left-brain activities. The opposing view to brain dominance theory is articulated by Jerre Levy (1985) who believes Sperry's original research has been mis-read and badly applied.

Nevertheless, a growing number of experts in educational instruction believe hemispheric relationships may play an integral part in learning styles, especially for the transescent (Johnston 1984, for example).

What do all these diverse developmental stages suggest about transescents, and how do they relate to academic performance? First, the differences are less a matter of *kind* than of *degree*. That is, transescents undergo and confront the same physiological, psychological, social, emotional types of development common to all human experience; however, these transformations are magnified during the transescent years. They are magnified instantly and so diversely that a giant gap emerges among age. Second, a person's academic (cognitive) success may be more directly proportionate to the (affective) domain than researchers originally understood. Mager (1968) and Rosenshine (1980) provide data which support the claim that student attitude is directly related to learning, and that school climates directly impact student attitudes, and that while an environment may not necessarily yield a direct correlate to either higher or lower achievement, it will yield a direct correlate to attitude. For example, students who are guided into a positive learning environment will have a tendency to continue with an interest in whatever subject is associated with that favorable climate. Also, peer acceptance has been shown to be related to academic achievement (Johnston, Markle, and Stingley 1982). Research dealing with types of learning styles and climates support the need for policies relating to curriculum--not grade configuration.

MAJOR RESEARCH

As mentioned earlier, the research on middle level education has steadily escalated since the inception of the movement circa 1964. Especially during the last half of the past decade and continually to 1989, the amount of useful research has provided policy makers with an abundance of data. Some data are clear and definitive; others are still inconclusive. Increasingly, though, researchers are able to say what is "known" about middle level education, what is "not known," and what is "hypothesized."

In his 1984 synthesis of middle level research J. Howard Johnston cites a 1975 review by Wiles and Thompson: "After reviewing the substantial studies conducted between 1968 and 1974, [Wiles and Thompson] concluded that research on middle schools was 'of remarkably low quality'" (Johnston 1984:134). This "low quality" was attributed to weak design and methodology, as proponents and opponents merely studied and reported the outcomes that confirmed their subjective positions.

Reviews by Gatewood (1972) and Calhoun (1983) produced significant numbers of "quality" research dealing with grade configurations--specifically between junior highs and middle schools. Following are the conclusions generated from these studies:

(1) little if any difference can be ascertained in the area of academic achievement between middle and junior high schools

(2) middle and junior highs are more alike than different and differ in name only

(3) the single most important variable impacting learning is the quality of school curricula--not grade level configuration

(4) 9th graders' developmental/maturation stages are more like 10th graders'; 6th graders are more like 7th graders. (Calhoun 1983)

Perhaps the strongest statement is issued by Johnston (1984:136) when he writes that,

> Grade organization in and of itself doesn't seem to make any difference. This simple generalization, on the basis of research, can be made with confidence. And with a decisiveness that is rare in research, I submit that we know all of any consequence that there is to know about the differences between schools that are named "middle schools" and those that are named "junior high schools." There is little point in trying to show that one plan is better than another. We know it isn't.

Further, several reviews by Johnston and Markle (1979, 1981, 1983) conclude that such things as student learning, attitudes and behavior, adjustment, truancy, and teacher performance cannot be statistically related to school organization alone.

The strongest rebuttal to these candid statements is found in a report on the national survey conducted by George and Oldaker (1985). Following is a synopsis of data collected from 160 "exemplary" middle schools in 34

states:

> 90% incorporated interdisciplinary team organization
>
> 94% provided for a flexibly scheduled school day
>
> 93% included a home-base advisor-advisee program for each child
>
> 99% noted a continuing effort to focus the curriculum on student personal development as well as academic achievement (George and Oldaker 1985:19).

Although these percentage indicators may reflect a general consensus as reported by the central office staff and school administrators who responded to the survey, two additional reported findings deserve close scrutiny:

(1) The findings of this study dispute earlier opinions that academic achievement is either unaffected or only modestly improved by a move to middle school organization. Rather than the typical finding of no differences, sixty-two percent of the respondents in this study described consistent academic improvement. . . .

Reorganization improved school discipline in almost every measurable manner. Tardiness and truancy moderately or greatly decreased, according to a majority of respondents, as did school vandalism and theft. Approximately 80% noted a significant reduction in office referral and suspensions, while close to 60% expelled fewer students after the transition. Almost 90% observed that teacher and staff confidence in managing disruptive students increased, diminishing

> administrative involvement in discipline in many schools. Reorganization to an exemplary middle school program clearly improves school and classroom discipline. (George and Oldaker 1985:20-21)

This is the only study found to make such emphatic statements, and the type of controls needed to adequately substantiate the cause/effect relationship purported to exit were not included in the study. Too many other unidentified and untested variables could have had a more direct impact than simply one--reorganization and implementation of middle school concepts. Such variables as type of student populations, level of teacher expertise, socio-economic status of the school community, mobility, school and class size, etc. were not considered. Note, too, that these are only "tallied" results from respondents who may have had varying amounts of data on which to make their assumptions. This study is in desperate need of replication and refinement to include the missing variables conducive to discriminate analysis before such claims can be substantiated.

(2) Although important related educational issues such as student personal development, school learning climate, faculty morale, staff development, parental involvement and support, community involvement and support/media coverage are reported to be positively affected by reorganization, high school staff perceptions of the effectiveness of the new middle school programs indicated no measurable difference. "Just over half

> of exemplary middle schools surveyed reported praise and approval form the upper grade teachers to whom they sent students." (George and Oldaker 1985:22-34)

A number of reasons might account for this discrepancy of perceptions between the two groups, i.e., middle school personnel and high school teachers, but the most obvious could be the established operational definition of an innovation: those directly involved tout the innovation, while others remain loyal to the tradition. Exemplary middle school personnel want their program to be successful and, therefore, may perceive it so; however, the more objective observer in the high school does not see outcomes directly and clearly (ipso facto) attributable to the change.

To determine the extent to which various educational programs have been incorporated into the school organization, researchers have isolated the critical components. Allee, for example, (1983) surveyed 173 junior high/middle schools from five different geographic areas in the state of Missouri to determine precisely what programs were offered at various grade levels from 4th- through 9th-grade. Schools reporting a fourth grade in their middle level organization offered no electives for that group; included fifth grades offered art (9%), music (4.5%), orchestra (13.6%), and band (6.4%); included sixth grades offered, in addition, physical education, health, home economics, industrial arts, speech, drama, typing, foreign languages (Allee 1983:2-3). This trend of increased electives continued through the ninth grade organizations. Not surprisingly, interscholastic athletics showed a

similar trend. While none of the reporting schools included grades four or five in interscholastic athletics, 4 of 82 sixth grades offered boys' and girls' basketball, and 83 of 165 schools that included grade seven offered interscholastic athletics for that age group. 110 of 165 eighth grades and 34 of 39 ninth grades offered similar programs (Allee 1983:9-11). This indicates the gradual inclusion of more diverse academic and extracurricular activities as schools include more and higher grades into their organizational structure.

Some interesting research on middle level education has been undertaken by the Center for Research on Elementary and Middle Schools at Johns Hopkins University in Baltimore, Maryland. Four recent studies, in particular, deserve addition.

McPartland (1987) drew data from a sample of 433 schools in the Pennsylvania Educational Quality Assessment to examine effects of self-contained classroom instruction and departmentalization on (1) student-teacher relations and (2) degree of subject matter instruction. The conclusions were that self-contained classrooms were conducive to student-teacher relations but less effective on the quality of instruction than departmentalization, which benefited specialized subject matter at a cost to student-teacher relations. An excerpt from the study reveals the driving force behind such a design:

> . . . educational practitioners will be able to develop an organizational design for their middle grade students that combines organizational and instructional features to balance the

strengths and weaknesses of different elements to address all major educational goals.

> No single design would be best, because various combinations of organizational and instructional features could be made to work well. (McPartland 1987:1)

Becker (1987) undertook a research design aimed at determining the extent to which different elementary and middle level school grade configurations affect academic learning for students with different abilities and specifically socio-economic status (SES). From a sample group of 8,000 Pennsylvania sixth-graders, Becker determined that, "elementary school settings benefit students from low social backgrounds, as does having instruction provided by a limited number of teachers" (Becker 1987:ii). He also concluded that,

> Sixth-grade students experience school under a variety of organizational structures, from highly tracked, highly departmentalized middle schools to self-contained, heterogeneous elementary school classrooms. Research about the impact of alternative organizational structures has not been clear and consistent. Partly, this may be because an organizational feature may have offsetting advantages and disadvantages for different groups of students. . . . Instructional specialization and middle school environments may assist learning by high ability students but may hinder learning by low ability students and that between-class ability grouping may help high ability students

but not help low- or low-average ability students. . . . (Becker 1987:23)

McPartland, Coldiron, and Braddock (1987) analyzed Pennsylvania Educational Quality Assessment (EQA) data along with National Assessment of Educational Progress (NAEP) data to describe grouping, staffing, and scheduling practices in elementary, middle, and high schools. They found a continuum of "pupil orientation" to "subject-matter" orientation from elementary through high school. In addition, four significant relationships were discovered:

(1) Grade level is a strong correlate of all school practices.

(2) Between-class grouping and within-class grouping may be alternate school practices for creating homogeneous instructional groups . . . although within-class grouping is infrequently used in secondary schools.

(3) The average socio-economic status (SES) of students in a school is not a strong correlate of staffing, scheduling or groping practices used in a school.

(4) Size of school does not account for the observed grade level relationships. (McPartland, Coldiron, and Braddock 1987:14-15)

Braddock, Wu, and McPartland (1988) used the 1985-86 National Assessment of Educational Progress (NAEP) principal and teacher survey data to study the impact of the shift from the 7-9 junior high grade configuration to the 6-8 middle school organizational structure in terms of staffing, scheduling and grouping practices. "These data show that school grade span

arrangements are correlated with specific demographic characteristics of schools and school districts including location, school size, and school and community ethnic and socioeconomic composition" (Braddock, Wu, and McPartland 1988:8). Following are specific findings directly correlated to grade-level configuration:

(1) the typical 7th grade student attending a grade 6-8 middle school is located in a suburban community. In contrast, the typical 7th grade student attending a traditional grade 7-9 junior high school is located within a city area. These data also show that the average 7th grader attending K-8 or 7-12 schools is primarily located in a rural, nonmetropolitan community.

(2) 7th grade students attending K-8 schools [are located] in extreme rural locations and those attending 7-12 schools [are located] in very small communities.

(3) the typical 7th grader in K-8 and 7-9 schools is in a setting with higher concentrations of low-income schoolmates than is a 7th grade counterpart in school with other grade-span configurations. (Braddock, Wu, and McPartland 1988:9)

Research on curriculum and instruction relating to middle level education tends to focus on a core curriculum, cooperative learning, and teacher/staff development. The California State Department of Education publication *Caught in the Middle* (1987) addresses the key components of a

core curriculum, citing two other Department publications: *Model Curriculum Guides: K-8* and *Model Curriculum Standards* for grades 9-12. Slavin (1981,1983,1987,1988), Hodgkinson (1986), Lounsbury and Vars (1978), Vars (1984) and others identify significant improvement in student learning by incorporating various cooperative techniques, and Hollifield (1988) stresses the need to balance the needs of learning and development by an appropriate management of staff. In addition, Griffin (1988) and Toepfer (1982) argue that interscholastic athletic programs *can* contribute to positive social development, thus enhancing a student's overall performance in school--including achievement. These programs must be guided by qualified coaches/advisers and stress participation over "perfection," however, if the program is to be beneficial (Griffin 1988, for example).

Effective schools research/exemplary middle level education

Recent "effective schools" research is currently impacting middle level education. Some widely recognized studies on effective schools are Brookover, et al. (1979), Edmonds (1979), and Rutter, et al. (1979), for example. Lawrence C. Stedman (1987) counters that these "effective schools characteristics" may not be fully substantiated, yet. Clearly, a cause/effect relationship has not yet been established; however, the effective schools research does accurately describe (not prescribe) what takes place in those schools that are producing "better" results. Significant characteristics most frequently documented are: "strong leadership by the principal, particularly

in instructional matters; high expectations for student achievement on the part of teachers; an emphasis on the basic skills; an orderly environment; and the frequent, systematic evaluation of students" (Stedman 1987:215). Johnston (1984) and Lipsitz (1983) concur that specific characteristics are present in effective middle level schools, as well.

More specifically, the following have been identified as characteristics found in "exemplary" middle level schools: flexible schedules, interdisciplinary team teaching, strong intramural athletic program, effective homeroom, core curriculum, cooperative learning experiences, well-administered guidance program, alternative methods of student grouping. Several have offered variations of these fundamental characteristics. The National Association of Elementary School Principals (1984), for example, identified 21 "standards of excellence" grouped into seven categories: organization, leadership, curriculum, instruction, training and development, school climate, and evaluation and assessment. Alexander and George (1981) offer "twelve essential characteristics or elements of exemplary middle schools":

1. A statement of philosophy and school goals that is based on knowledge of the educational needs of boys and girls of middle school age and is used in school program planning and evaluation.
2. A system for school planning and evaluation which is specifically designed for the middle school level and which involves all concerned in the school community.

3. A curriculum plan for the middle school population that provides for their continuous progress, basic learning skills, use of organized knowledge, personal development activities, and other curriculum goals as locally determined.

4. A program of guidance which assures the availability of help for each student from a faculty member well-known to the student.

5. An interdisciplinary teacher organization which provides for team planning, teaching, and evaluation, and for appropriate interdisciplinary units.

6. Use of methods of student grouping for instruction which facilitate multiage and other instructional arrangements to maximize continuous progress.

7. Block scheduling and other time arrangements to facilitate flexible and efficient use of time.

8. Planning and use of physical facilities to provide the flexible and varied program required for middle schoolers.

9. Instruction which utilizes a balanced variety of effective strategies and techniques to achieve continuous progress of each learner toward appropriate instructional objectives.

10. Appropriate roles for the various individuals and groups required for continued and dynamic leadership in the middle school, with a continuing program of staff development and renewal focused on the unique problems of middle school personnel.

11. A plan for evaluation of student progress and of the school itself to assure the achievement of the goals of the school.

12. Participation with other schools and with community groups in the continuing study of the middle school population and of society as a whole, to be responsive to changing needs and conditions of the future. (Alexander and George 1981:18-19)

SUMMARY

At the turn of the 20th century, educational policy makers began to rethink the value of school organizational structure. The 19th century 8-4 plan was replaced in the early 1900's with a number of different grade-level configurations, although the 6-2-4 or 6-3-3 patterns predominated in order to accommodate the new "junior high school" educational programs. By the early 1960's dissatisfaction with the new "junior" high school led to the creation of middle schools, with the assumption that sixth grade ought to be included and ninth grade ought to be a part of high school. Thus, the K-5, 6-8, 9-12 grade-level plans became common, and continue to grow.

In as much as this evolution occurred, in theory, to better meet the needs of transescents, more reorganization took place to facilitate administrative needs than educational/curriculum reform. As a result, research on middle level education has focused more narrowly during the past decade and a half (with contributions being made by social scientists

outside the field of education) on the unique needs of transescents.

Transescents need a program that addresses their vast differences in developmental growth, and exemplary middle schools or middle level schools are identified as those that have adopted policies to meet these needs. What is not known is the extent to which grade-level organization correlates to cognitive and affective development or academic and social well-being. Nor can one assume that an educational program can be identified in name alone--i.e., "K-8," "junior high school," "middle school." As Toepfer, Lounsbury, Arth, and Johnston (1986:6) state, "school districts and their communities should avoid getting locked into abstract controversies about which grades belong in the middle level school. . . . grades [do not] make a school. Program makes a school."

GLOSSARY

Curricular, instructional, organizational expressions common to middle level education:

1. Articulation: the transition from one educational experience to another.

2. Continuous progress: syn.non-graded; students are assigned to instructional units based on educational goals and student interests and needs, rather than the traditional "graded" system as determined by age and chronological grade configuration. (often confused with "tracking")

3. Core curriculum: subjects are integrated around a common theme, and students are given instruction in blocks of time, not necessarily of equal length; most core classes group "related" material, e.g., English, history, art--to form a humanities unit.

4. Curriculum: the sum of experiences of learners which take place under the auspices of the school (Alexander 1968); often sub-divided into the programs of studies, activities, services, and "hidden" or latent interactions.

5. Departmentalization: students move from one class to another throughout the school day to interact with teachers who are trained in specific subject matter and who offer varying degrees of expertise as identified by area of expertise; commonly found in high schools, colleges and universities.

6. Flexible schedule: any of various forms of arranging time to fit educational goals and objectives instead of offering equal time for most classes; modular, block, and open classrooms are common forms.

7. Gifted program: any of various types of programs designed specifically for students identified as academically "gifted" or talented.

8. Graded system: moving students from one grade level to the next, e.g., the traditional K-12 system, whereby students are identified by the grade of instruction rather than by academic level of performance. Opposite: Non-graded system--students move through the educational system, usually after mastering skills; thus, articulation is achieved by building upon learning rather than by chronological age or grade level.

9. Homeroom: a classroom serving as a "base" for students to gather systematically, usually daily. There are two distinctively different types:
(1) administrative--those designed to disseminate administrative information and address procedures, collect information, and handle bookkeeping and enrollment-related matters
(2) guidance--considerable time is devoted to values clarification, vocational and career information, individual needs, study skills, inter- and intrapersonal activities.

10. Homogeneous grouping: syn. ability grouping; students are grouped together for instruction based on achievement, IQ, academic ability, sex, or scheduling constraint. (This is "tracking" whether it is done by the school unit or the individual student.

11. Horizontal organization: syn. horizontal articulation; the method of dividing students into instructional units and allocating them to teachers; may be self-contained or departmentalized.

12. Independent study: a program allowing students to work on specific activities, primarily on their own but under the direction of a teacher.

13. Intra-disciplinary team teaching: a number of teachers specializing in the same subject field coordinate and administer instruction.

14. Inter-disciplinary team teaching: a number of teachers specializing in a number of different subject fields coordinate and administer instruction.

15. Mini-courses: short, often "intersession" courses of a few days or weeks designed to focus study on a specific issue--often non-academic in nature, but not necessarily.

16. Peer tutoring: students help "tutor" others of the same age.

17. Scope: breath and depth of curriculum experienced; includes the range and variety of subject and study.

18. Self-contained classroom: students stay with one teacher for the entire school day, or students remain in the same classroom, albeit teachers may rotate.

GLOSSARY

19. Sequence: order in which experiences of the learner are encountered.

20. Teacher-counselor concept: specially trained classroom teachers advise and counsel students.

21. Transescent: child in a stage of development that is somewhere between childhood and adolescence; roughly between ages 10 and 14, although often earlier for girls and later for boys; (see Eichhorn [1966]; and pages x-x in this review).

22. Vertical organization: syn. vertical articulation; the method of moving students through the educational system, usually from one year to the next from kindergarten through the 12th grade. Although this *graded* system is most common, various forms of *non-graded* method can also be used to achieve vertical articulation.

Appendix A

As early as 1888, Charles W. Eliot, then President of Harvard, led a National Education Association study that produced an agenda for middle level education. Eliot's statements to the superintendent's association in 1888 had a profound effect on subsequent school policy regarding the education of children in middle grades. A summary of his recommendations yield the following:

(1) The elementary program should encompass 8 years of study.

(2) A child's education should be complete by age 13 or 14.

(3) More able children should be allowed to move through school more rapidly.

(4) Repetition and useless work should be eliminated.

(5) Certain subjects (e.g. algebra and geometry) should be introduced to 12-13 year olds (7-8 grades) and Latin even earlier.

(6) The number of student electives should be increased.

(7) Graduation requirements should be made more flexible. (Eliot 1909:151-176).

In 1893, the Committee of Ten recommended that:

(1) several courses (e.g. algebra, geometry, foreign languages) should begin during last years of elementary education, and

(2) elementary education should be reduced to 6 years (National Education Association 1894).

The Committee of Fifteen subsequently appointed by the Department of Superintendence of the National Educational Association to study the organization of school systems, issued a report in 1895 in which they:

(1) opposed reducing elementary education from 8 to 6 years,

(2) recommended algebra and geometry be studied in 7th grade, and

(3) promoted the study of Latin in the 8th grade (National Education Association 1895)

In 1899 the Committee of College Entrance Requirements recommended:

(1) 6 years of elementary school, a unified high school course of study beginning in grade 7, and

(2) suggested that the 7th grade is the natural turning point (National Education Association 1899)

The Department of Secondary Education's first report in 1907 supported a 6-6 plan for the following reasons:

(1) Pupils could be taught by teachers specially trained in the various subject fields.

(2) Departmentalized instruction would give seventh and eighth grade pupils contact with several teacher personalities.

(3) The 6-6 plan would make laboratories available so that elementary science could be introduced earlier.

(4) Manual training shops would be more readily accessible to upper-grade levels.

(5) The work in the modern languages could be begun earlier and continued longer than at present.

(6) The transition from the elementary to the secondary school would be less abrupt.

(7) More pupils would be likely to enter the ninth grade than under the traditional plan.

(8) An equal division of the twelve years would make the system. More nearly self-consistent, as is shown by the European secondary schools.

(9) The six-year secondary course would give pupils more time to prepare for college.

(10) The lengthening of the high school course to six years would help the curriculum to include some of the newer subjects. (In Gruhn and Douglass 1956:12)

In 1913 the Committee on Economy of Time concluded that:

(1) junior high include grades 7 and 8, and that

(2) secondary schools have two divisions-junior and senior high. (Baker 1913).

In 1918 the Committee on Reorganization of Secondary Education established the Seven Cardinal Principles of Secondary Education which fundamentally influenced the design of junior high curriculum. The Seven Cardinal Principles of Secondary Education are:

(1) health

(2) command of fundamental processes

(3) worthy home-membership

(4) vocational membership

(5) civic education

(6) worthy use of leisure

(7) ethical character (National Education Association 1918).

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